

10

FIG. 1

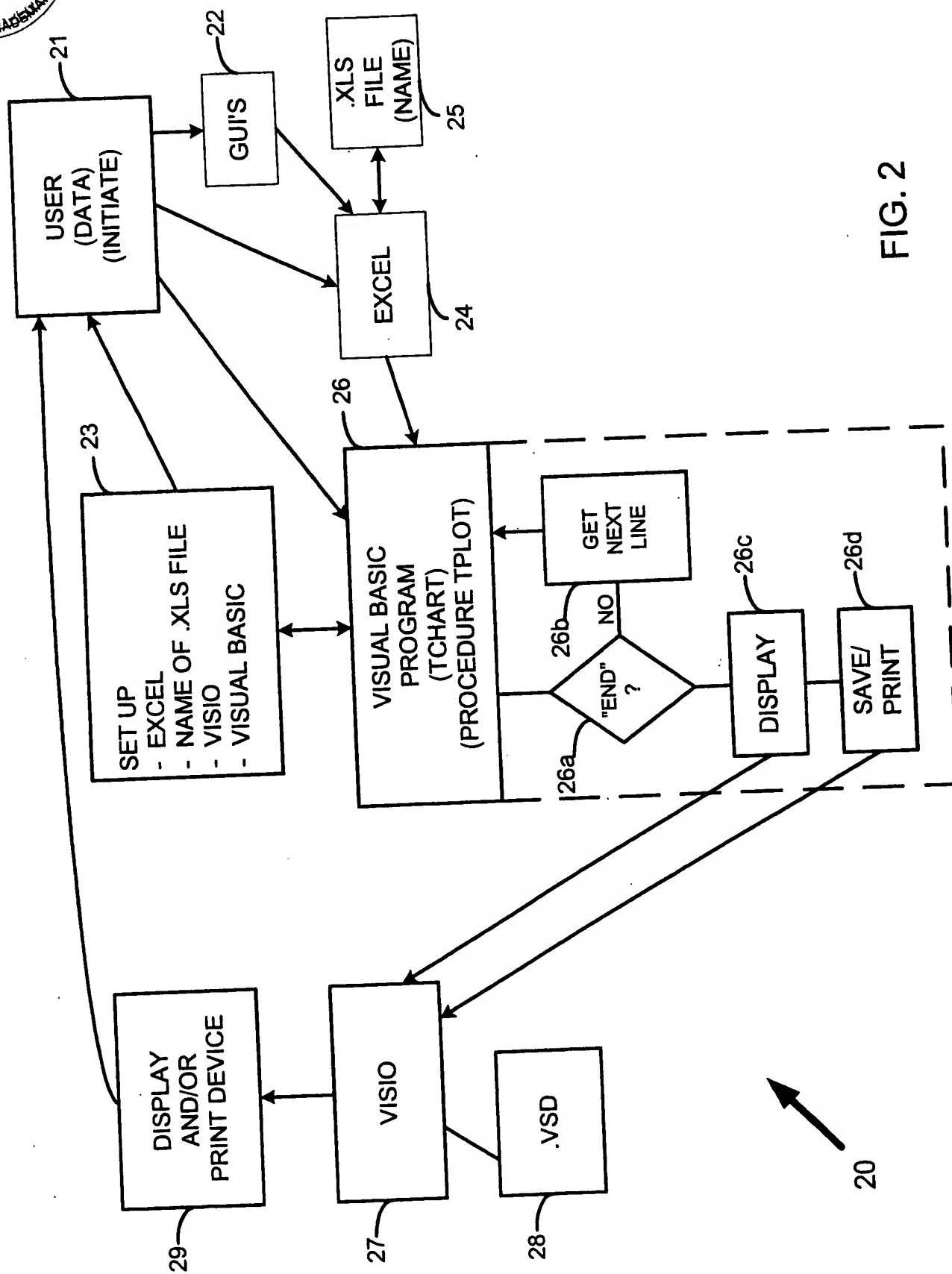
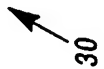


FIG. 2



### Figure 3

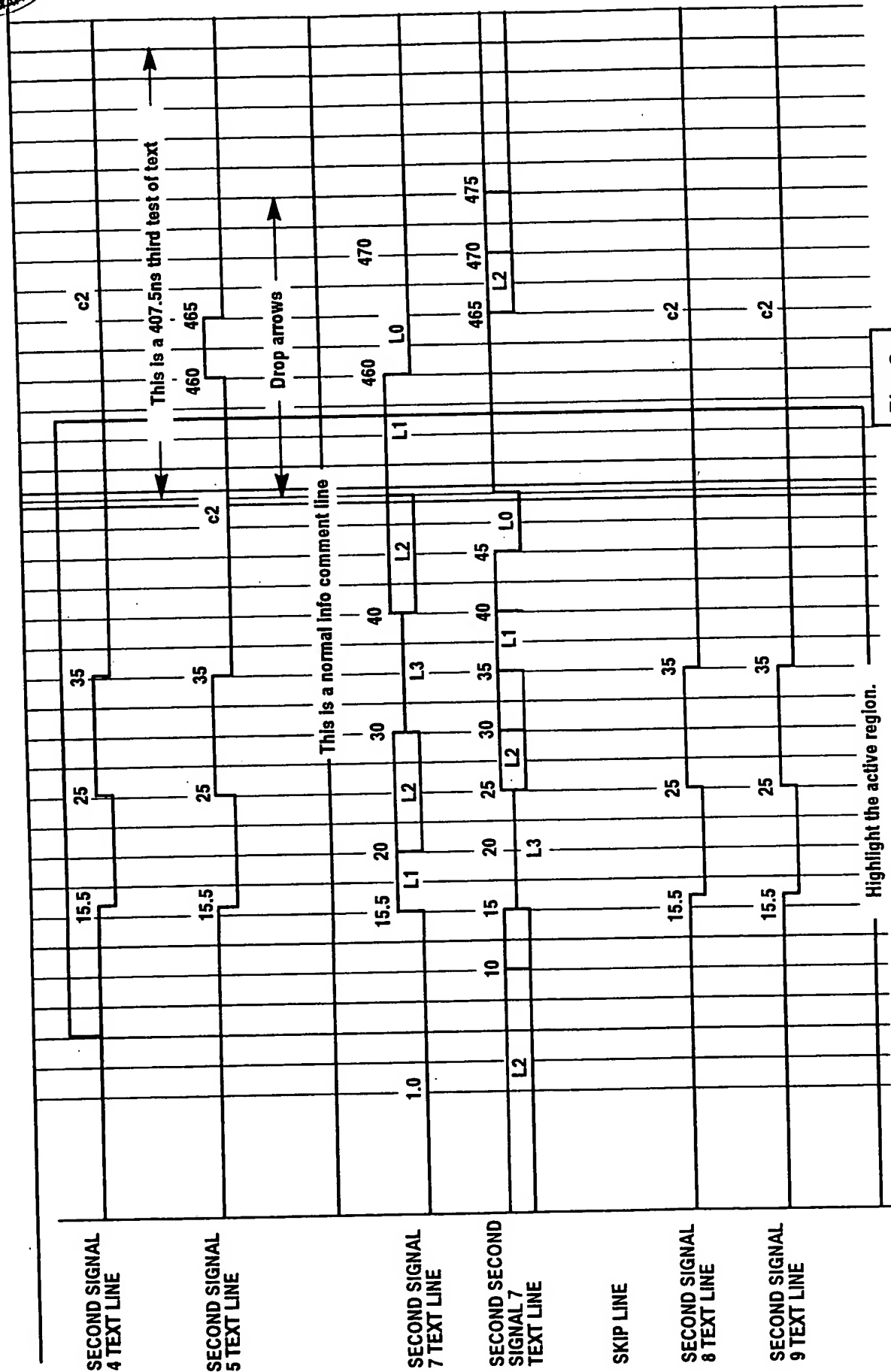


Fig. 3a  
Fig. 3b

Fig. 3b

Figure 3

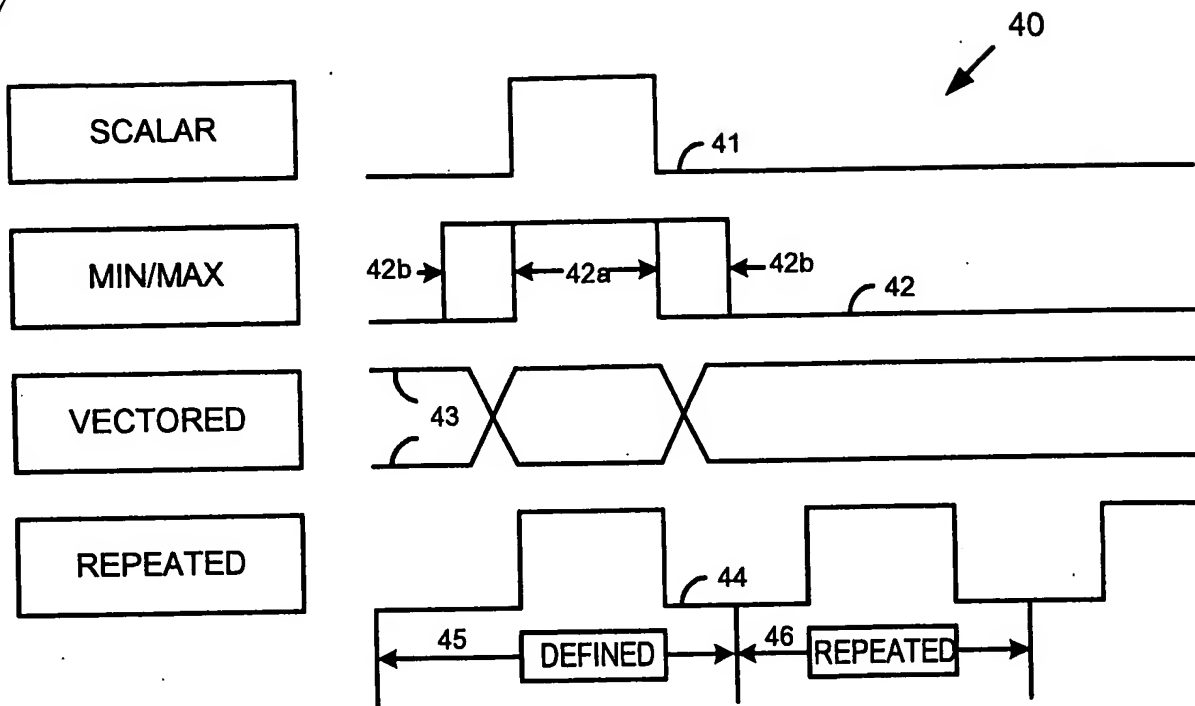


FIG. 4A

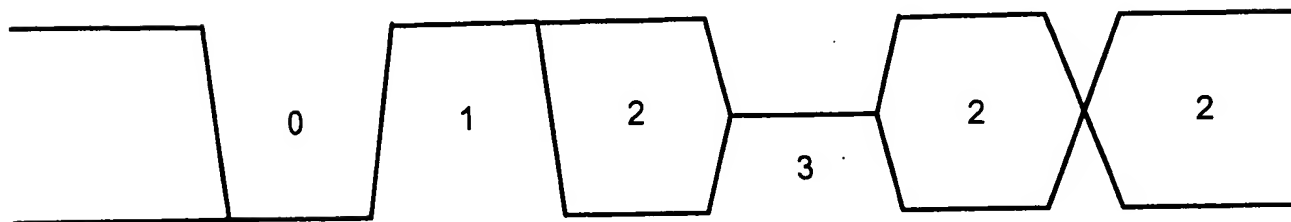


FIG. 4B



Create a new TChart definition

TimeChart  
Version 1.0   Jan 24, 2001   E.A. Rodi

Header

Drawing title  
TimeChart

Base time for plot to  
(+/-)  
0

Card Option

☐ Plot Borders

Page Size ☒ A   ☐ B   ☐ C   ☐ D   ☐ E

☒ Landscape

☒ Display Times

☒ Display Bottom Time

☒ Alternate Text

Plot Color ☒ Black   ☐ Red   ☐ Green   ☐ Blue  
☐ Violet   ☐ Cyan

Cycles

Number of  
cycles to plot  
40

Time period  
of each cycle  
10

Number of first  
cycle (+/-)  
0

Optional Inputs

Title  
CYCLE

Time where  
timeline is broken

Time where  
timeline resumes

Time Markers

☐ Repeat markings

Number of  
repeated cycles

Time period of  
repeat cycle

time-M1

t-M2

t-M3

t-M4

t-M5

t-M6

t-M7

t-M8

New Worksheet

Clear Worksheet

Write to Excel

Cancel

→ -NewTimeChart GUI

**Figure 5**

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Add Clocks

Pre-clock options

☒ Time ☐ Bottom ☒ Alt

Plot Color

☒ Black ☐ Red ☐ Green ☐ Blue ☐ Violet ☐ Cyan

Define Clocks using Phase commands

Title	Initial Level	Phase Offset	Phase Width	Cycle Time

Define clocks using Repeat command (Optional)

Title	Initial Level	Cycle Time	Num Rots

Transition / Dotted

☒ T ☐ D

T1 / Comment

Post-clock options

☒ Time ☒ Bottom ☒ Alt

Plot Color

☒ Black ☐ Red ☐ Green ☐ Blue ☐ Violet ☐ Cyan

Write to Excel

Cancel

Figure 6

-AddClocks GUI



Add New Signals

Options

☒ Time

☒ Bottom

☒ Alt

Plot Color

☒ Black

☐ Red

☐ Green

☐ Blue

☐ Violet

☐ Cyan

Add Option

Signal Templates

Plots: ☒ Scaler

☐ Min/Max

☐ Vector

☐ Repeat

☐ Dotted

☐ Glitch

Title

Initial Level

0

Cycle Time of Repeat

Number of Repeats

Number of Transitions

2

Glitch Type

1

Add Signal

Infos

☒ Comment

☐ Arrows

☐ Begin Arrow

☐ End Arrow

☐ Open Arrow

☐ Close Box

Object Number

Time T1

Time T2

Text

Add Info

Add End

Add Marker

At time

Exit

→ -AddNewSignals GUI  
**Figure 7**





In re Application of Eugene A. Rodi et al.  
 File # RA 5425 - Customer #27516  
 Title: Efficient Timing Chart Creation and Manipulation  
 Filing date: December 20, 2001  
 Drawing 9 of 12

options	+I	-B							
H	Test Timing Plot Data		-10						
Cycle	10		10	2		10 ns	50	450	
options	-T								
Rpt	Clock (Phase 1-4)		0	10	0				
T	0				1				
T	1.25								
T	2.5				2				
T	3.75								
T	5				3				
T	6.25								
T	7.5				4				
T	8.75								
Options	+T								
Mark									
Label									
T	All in cut		0						
T	65 C1			75	C2				
T	85 CC11			95	CC22				
Label	T2 in cut		0						
T	35 C1			75	C2				
Label	NONE in cut		0						
T	35 C1			475	C2				
Label	T1 in cut		0						
T	65 C1			75	C2				
T	85			95					
T	111			470					
Label	First Signal		1						
T	10	Cmt 1 too long to fit this space		20	<'<Cmt 2'				
T	35	c2		44.5					
Glitch	55	txt		-					
T	66.6	last							

Figure 8A



In re Application of Eugene A. Rodi et al.  
 File # RA 5425 - Customer #27516  
 Title: Efficient Timing Chart Creation and Manipulation  
 Filing date: December 20, 2001  
 Drawing 10 of 12

T		475	Done						
Info		Show test #c cycles 30.2 to 66ns	Arrows		1	30.2	66.8		
Label		Second Signal Text Line		1					
T		25.5							
T		125	c1						
T		485				< c2			
Label		Second Signal 1 Text Line		1					
T		15.5							
T		25	c1						
T		35				c2			
T		45	source of drop						
T		450							
Info		Test of the highlight area	OpenBox		1	15.5	35		
Info		Drop Arrows	BeginArrow		1	55	475		
Info		This is another test of text	Arrows		1	2	21		
Label		Second Signal 3 Text Line		1					
t		15.5							
t		25	c1						
t		35				c2			
Info			CloseBox		1				
Label		Second Signal 4 Text Line		1					
t		15.5							
Info		Highlight the active region.	OpenBox		9	5	457		
t		25	c1						
t		35				c2			
Info		Mark #T ns. third test of text	Arrows		1	80	488		
Label		Second Signal 5 Text Line		1					
T		15.5							

Figure 8B



T	25	c1							
T	35								
T	460								
T	465								
Info	test of drop arrows	EndArrow		1					
Info	Mark normal info comment line.								
LV	Second Signal 7 Text Line		0						
TV	15.5	L0		0					
TV	20	L1		1					
TV	30	L2		2					
TV	40	L3		3					
TV	50	L2		2					
TV	460	L1		1					
TV	470	L0		0					
Label v	Second Second Signal 7 Text Line		3						
TV	10	L2		2					
TV	15			2					
TV	20	L3		3					
TV	25			3					
TV	30	L2		2					
TV	35			2					
TV	40	L1		1					
TV	45			1					
TV	50	L0		0					
TV	55			0					
TV	60	L1		1					
TV	465			1					
TV	470	L2		2					
TV	475			2					
Label	Skip line		1						
Glitch	1000								

Figure 8C



Label	Second Signal 8 Text Line		1				
T	15.5						
T	25	c1					
T	35				c2		
Label	Second Signal 9 Text Line		1				
T	15.5						
T	25	c1					
T	35				c2		
Info	This text should not print!	CloseBox		9			
LV	Second Signal 7 Text Line		0				
TV	15.5	L0		0			
TV	20	L1		1			
TV	30	L2		2			
TV	40	L3		3			
TV	50	L2		2			
TV	460	L1		1			
TV	470	L0		0			
Label	Second Signal 7 Text Line		3				
TV	10	L2		2			
TV	15			2			
TV	20	L3		3			
TV	25			3			
TV	30	L2		2			
TV	35			2			
TV	40	L1		1			
TV	45			1			
TV	50	L0		0			
TV	55			0			
TV	60	L1		1			
TV	465			1			
TV	470	L2		2			
TV	475			2			
Info	Show text #c cycles 30.2 to 66 ns	Arrows		1	30.2	66.8	
END							

Figure 8D